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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,317	06/25/2003	Peter J. Gilbert	C02-29	3150

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EXAMINER

BLAU, STEPHEN LUTHER

ART UNIT	PAPER NUMBER
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3711

DATE MAILED: 08/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,317

Applicant(s)

GILBERT ET AL.

Examiner

Stephen L. Blau

Art Unit

3711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/12/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The change to claim 9 is agreed with and the rejection under 35 U.S.C. 112, second paragraph, is removed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKay in view of Nagi.

McKay discloses a first body of variable stiffness/C.O.R. in the form of different desired pressures a plastic core (Col. 4, Lns. 54-58) is inflated to (Col. 6, Lns. 16-17), a rear cavity extending rearward from a thin front face (Fig. 5), a plastic core of a second material less dense and more flexible than a first material in the form of metal of various types (Col. 4, Lns. 1-10), compressed gas (Col. 4, Lns. 54-58), a rear cavity comprising an opening that is sealed by a visible portion of a core in the form of a head not having a plug (Col. 6, Lns. 15-23 (The terms a closure can be installed implies that it doesn't

Art Unit: 3711

have to be.)), the curvature and configuration of the striking face are all of conventional design and configuration (Col. 5, Lns. 19-23), and an inflatable bladder construction can be incorporated into various hollow club heads such as those shaped as a driver (Col. 9, Lns. 13-21). McKay does not disclose the density of the plastic core but clearly an artisan skilled in the art of making an expandable core would have selected a suitable density for the flexible plastic core in which having a density equal or less than 4.5 gm/cc is included.

McKay lacks an internal volume between 35 cc to 50 cc, a plastic core having a density equal or less than 4.5 gm/cc, a stiffness of a front face being greatest at a face center and progressively more flexible away from a face center, a coefficient of Restitution varying across a front face, and air.

Nagai discloses a hollow club head in the form of a utility iron club (Title) having an internal volume between 35 cc to 50 cc (Claim 20) and a stiffness of a thin front face being greatest at a face center and progressively more flexible away from a face center in order to create a spring-like effect (Fig. 1, [0020]). In view of the publication of Nagai it would have been obvious to modify the head of McKay to be a utility iron club head having an internal volume between 35 to 50 cc and a stiffness of a front face being greatest at a face center and progressively more flexible away from a face center in order to utilize the advantages of internal bladders of McKay for hollow club heads which are utility irons. As such the coefficient of Restitution would vary across a front face due to the varying of the face thickness.

It would have been obvious to modify the plastic core of McKay to have a density equal or less than 4.5 gm/cc in order to minimize the weight added to a head and in order to make a core inflate easy by not being too dense.

It would have been obvious to include in the head of McKay a gas being air in order to minimize the costs to manufacture a head.

4. Claims 1-3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKay in view of Kobayashi.

McKay discloses a first body of variable stiffness/C.O.R. in the form of different desired pressures a plastic core (Col. 4, Lns. 54-58) is inflated to (Col. 6, Lns. 16-17), a rear cavity extending rearward from a thin front face (Fig. 5), a plastic core of a second material less dense and more flexible than a first material in the form of metal of various types (Col. 4, Lns. 1-10), compressed gas (Col. 4, Lns. 54-58), a rear cavity comprising an opening that is sealed by a visible portion of a core in the form of a head not having a plug (Col. 6, Lns. 15-23 (The terms a closure can be installed implies that it doesn't have to be.)), the curvature and configuration of the striking face are all of conventional design and configuration (Col. 5, Lns. 19-23), and an inflatable bladder construction can be incorporated into various hollow club heads such as those shaped as a driver (Col. 9, Lns. 13-21). McKay does not disclose the density of the plastic core but clearly an artisan skilled in the art of making an expandable core would have selected a suitable density for the flexible plastic core in which having a density equal or less than 4.5 gm/cc is included.

McKay lacks an internal volume between 35 cc to 50 cc, a plastic core having a density equal or less than 4.5 gm/cc, and air.

Kobayashi discloses a hollow club head in the form of an iron club with a thin front face (Fig. 1, Col. 1, Lns. 5-10) having an internal volume between 35 cc to 50 cc (Claim 1). In view of the patent of Kobayashi it would have been obvious to modify the head of McKay to be an iron club head having an internal volume between 35 to 50 cc in order to utilize the advantages of internal bladders of McKay for hollow club heads which are irons.

It would have been obvious to modify the plastic core of McKay to have a density equal or less than 4.5 gm/cc in order to minimize the weight added to a head and in order to make a core inflate easy by not being too dense.

It would have been obvious to include in the head of McKay a gas being air in order to minimize the costs to manufacture a head.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKay in view of Nagi as applied to claims 1-5, 7, and 9 above, and further in view of Iwata.

McKay lacks a maximum C.O.R. ranging from about .8 to .9.

Iwata discloses a hollow iron club head having a maximum C.O.R. ranging from about .8 to .9 (Claim 1). In view of the publication of Iwata it would have been obvious to modify the head of McKay to have a maximum C.O.R. ranging from about .8 to .9 in order to maximize energy transferred to a ball at impact.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKay in view of Nagi as applied to claims 1-5, 7, and 9 above, and further in view of Galloway.

McKay lacks a maximum C.O.R. ranging from about .8 to .9.

Nagai discloses a hollow club head in the form of a utility iron club (Title) which will have a coefficient of restitution having a stiffness of a front face being greatest at a face center and progressively more flexible away from a face center in order to create a spring-like effect or trampoline effect (Fig. 1, [0020]).

Galloway discloses a metal hollow head having a stiffness of a front face being greatest at a face center and progressively more flexible away from a face center in the form of the thickness profile of the face (Col. 8, Lns. 10-35) and a maximum C.O.R. ranging from about .8 to .9 (Col. 8, Lns. 51-60) in order to have a head with a high Coefficient of Restitution (Col. 2, Lns. 50-53). In view of the references of Nagai and Galloway it would have been obvious to modify the head of McKay to have a stiffness of a front face being greatest at a face center and progressively more flexible away from a face center, a coefficient of Restitution varying across a front face, and a maximum C.O.R. ranging from about .8 to .9 in order to have a head with a high C.O.R.

7. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKay in view of Nagi as applied to claims 1-5, 7, and 9 above, and further in view of Hasebe or Toyota.

McKay discloses that the thickness of the thin sheet, film and/or materials from which the bladders are constructed in accordance with this invention can vary from

Art Unit: 3711

material to material, depending upon the strength, toughness and life characteristics of the particular material (Col. 9, Lns. 60-64), a typical example of an appropriate materials having a total thickness of 15 mils can be used (Col. 9, Lns. 64-67), a list of different material which can be used (Col. 9, Lns. 45-59), and a bladder able to reduce the thickness of a head by .005 to .030 inch (Col. 6, Lns. 30-36). McKay does not disclose all the different thicknesses of the different materials and for different desired strengths, toughness and life characteristics but an artisan skilled in the art of forming strong, tough and long life bladders would have selected a suitable thickness in which a thickness of .06 to .1 inch is included.

McKay lacks a front face having a thickness between .06 to .09 inch and a thickness of a composite core being between .06 to .1 inch.

Hasebe discloses a hollow iron type head (Fig. 4B) with a face thickness in the range of .06 to .1 inch [0044] in order to have an iron with a deep center of gravity [0010]. Toyota discloses a hollow long iron (Col. 1, Lns. 5-8) type head a volume of less than 170 cc (Col. 3, Lns. 1-10), and example of a head with a volume of 80 cc (Col. 5, Lns. 1-7), and a face thickness in the range of .06 to .1 inch (Col. 5, Lns. 8-11) in order to have an iron hitting long distances and in a good direction (Col. 1, Lns. 65-67). In view of the patents of Hasebe or Toyota it would have been obvious to modify a head of McKay to have an iron front face having a thickness between .06 to .09 inch in order to provide reduced vibration and shock characteristics through use of a bladder to a hollow iron head which has a deep center of gravity or long hitting distances and in a good direction.

It would have been obvious to modify the head of McKay to have a thickness of a composite core being between .06 to .1 inch in order to provide a very strong, tough and long life bladder for a hollow head.

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKay in view of Kobayashi as applied to claims 1-3, and 7 above, and further in view of Hasebe or Toyota.

See elements of structure previously rejected by McKay in view of Hasebe or Toyota.

Response to Arguments

9. The arguments that McKay is improper due to never referring to the possibility of an inflatable bladder used in irons excepting when discussing a shaft and the only reference for heads is to wood type heads are disagreed with. Forming irons with a wood type shape is a known teaching at the time of the invention. Toyota clearly shows this by having the same hollow head invention for fairway woods and long irons. Kobayashi also shows an iron having a hollow wood shaped head. So one skilled in the art would look at benefits to woods also as benefits to wood shaped irons. In addition, the examiner believes McKay intended his invention to be used for all hollow type heads. McKay specifically states that the bladder can be incorporated into various hollow club heads (Col. 9, Lns. 13-21). Though McKay only discusses irons with

Art Unit: 3711

respect to the shaft bladder (Col. 9, Lns. 18-21) it may have been that McKay was not considering a shape of an iron outside of the conventional none hollow blade shape which is hollow as either Nagi or Kobayashi teach. But McKay does also state that his invention is for a hollow club head in the shape of a driver or other wood club (Col. 4, Lns. 1-10) which irons can be as shown by Toyota and Kobayashi. The examiner believes those skilled in the art at the time of the invention would read the disclosure of McKay and see it obvious to include both hollow wood type iron heads and hollow none wood type head as benefiting from the advantages which the bladder of McKay provides. The argument that none of the manufactures have sought to make the shell extremely thin (therein requiring a composite core for support to the face region) and none has utilized the composite core to also serve as the back portion of the club head disagreed with. McKay clearly discloses a head with a shell extremely thin (therein requiring a composite core for support to the face region) and core to also serving as a portion of a head. The back having a core to serve as a portion of a head is a suitable location since there are not many possibilities. The arguments that combining Nagai or Kobayashi with McKay are improper due to none of the design concepts of the present invention would be recreated are disagreed with. The applicant's motivation does not have to be used to combine references. There can be other motivation. McKay discloses using bladders to reduced vibration and shock characteristics as well as reduce weight. Clearly either of these motivations are needed for irons hollow heads as well as wood hollow heads.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Blau whose telephone number is (571) 272-4406. The examiner is available Monday through Friday from 8 a.m. to 4:30 p.m.. If the examiner is unavailable you can contact his supervisor Greg Vidovich whose telephone number is (571) 272-4415. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0858. (TC 3700 Official Fax 703-872-9306)

slb/ 12 August 2005


STEPHEN BLAU
PRIMARY EXAMINER